

Claims:

We claim:

1. An acoustical insulation material comprising
5 a first layer comprising a nonwoven web having a density of at least 50 kg/m^3 and comprising thermoplastic fibers having an average fiber diameter of less than about 7 microns; and
a second layer comprising a high loft material.
- 10 2. The acoustical insulation material of claim 1, wherein the first layer has a thickness less than about 3 mm.
3. The acoustical insulation material of claim 1, wherein the thermoplastic fibers of the first layer have an average fiber diameter of less than about 5 microns.
- 15 4. The acoustical insulation material of claim 2, wherein the thermoplastic fibers of the first layer have an average fiber diameter of about 1.0 microns to about 4.0 microns.
5. The acoustical insulation material of claim 2, wherein the thickness of the first layer is
20 between about 0.2 mm to about 2.5 mm and the density of the nonwoven web of the first layer is between about 55 kg/m^3 and about 150 kg/m^3 .
6. The acoustical insulation material of claim 5, wherein the thickness of the first layer is
25 between about 0.3 mm to about 1.0 mm and the density of the nonwoven web of the first layer is between about 58 kg/m^3 and about 100 kg/m^3 .
7. The acoustical insulation material of claim 1, wherein the thermoplastic fibers of the first layer comprise meltblown fibers of a thermoplastic polymer selected from the group consisting of selected from the group consisting of polyolefins, polyesters, polyamides,
30 polycarbonates, polyurethanes, polyvinylchloride, polytetrafluoroethylene, polystyrene, polyethylene terephthalate, polylactic acid and copolymers and blends thereof.
8. The acoustical insulation material of claim 7, wherein the thermoplastic polymer comprises a polyolefin.

35

9. The acoustical insulation material of claim 8, wherein the polyolefin comprises polypropylene.
10. The acoustical insulation material of claim 1, wherein the material has a pressure drop of at least 1 mm of water at a flow rate of about 32 liters/min.
11. The acoustical insulation material of claim 10, wherein the pressure drop is between about 3mm and about 10 mm of water at a flow rate of about 32 liters/min.
12. The acoustical insulation material of claim 1, wherein the thermoplastic meltblown fibers of the first layer comprise monocomponent fibers.
13. The acoustical insulation material of claim 1, wherein the thermoplastic [meltblown] fibers of the first layer comprise multicomponent fibers.
14. The acoustical insulation material of claim 13, wherein the multicomponent fibers are meltblown.
15. The acoustical insulation material of claim 13, wherein the multicomponent fibers have a side-by-side configuration.
16. The acoustical insulation material of claim 15, wherein the multicomponent fibers comprises at least one component comprising polyethylene and at least one component comprising polypropylene.
17. The acoustical insulation material of claim 13, wherein the multicomponent fibers are splittable.
18. The acoustical insulation material of claim 13, wherein the thickness of the first layer is between about 0.2 mm to about 2.5 mm and the density of the nonwoven web of the first layer is between about 55 kg/m³ and about 150 kg/m³.
19. The acoustical insulation material of claim 1, wherein the high loft material is selected from the group consisting of fiberglass, a high loft spunbond nonwoven web, a bonded carded web and a polyester high loft.

20. The acoustical insulation material of claim 19, wherein the high loft material comprises a high loft spunbond nonwoven web.

21. The acoustical insulation material of claim 20, wherein the high loft spunbond
5 nonwoven web comprises crimped multicomponent filaments.

22. The acoustical insulation material of claim 21, wherein the crimped multicomponent filaments have latent crimp which is activated when the multicomponent filaments are in a fiber draw unit.

10

23. The acoustical insulation material of claim 21, wherein the crimped multicomponent filaments have latent crimp which is activated after the multicomponent filaments are laid-down on a forming wire.

15

24. The acoustical insulation material of claim 21, wherein the crimped multicomponent filaments comprise a side-by-side configuration.

20

25. The acoustical insulation material of claim 24, wherein the crimped multicomponent filaments have latent crimp which is activated after the multicomponent filaments are laid-down on a forming wire.

26. The acoustical insulation material of claim 19, wherein the thickness of the second layer is at least 4 mm.

25

27. The acoustical insulation material of claim 26, wherein the thickness of the second layer is between about 5 mm and about 200 mm.

28. The acoustical insulation material of claim 27, wherein the thickness of the second layer is between about 9 mm and about 100 mm.

30

29. The acoustical insulation material of claim 26, wherein the thickness of the second layer is between about 12 mm and about 25 mm.

30. The acoustical insulation material of claim 19, wherein the high loft material
35 comprises rotary spun bicomponent fibers.

31. The acoustical insulation material of claim 30, wherein the rotary spun bicomponent fibers are bicomponent glass fibers.

5 32. The acoustical insulation material of claim 13, wherein the density of the second layer is less than about 50 kg/m^3 .

33. The acoustical insulation material of claim 32, wherein the density of the second layer is less than about 25 kg/m^3 .

10 34. The acoustical insulation material of claim 33, wherein the density of the second layer is between about 1.5 kg/m^3 and about 20 kg/m^3 .

15 35. The acoustical insulation material of claim 1, further comprising a third layer attached either to the first layer or the second layer.

36. The acoustical insulation material of claim 35, wherein the additional layer comprises a nonwoven web having a density of at least 50 kg/m^3 and comprising thermoplastic fibers having an average fiber diameter of less than about 7 microns and the additional layer is attached to the second layer.

20 37. A method of attenuating sound waves passing from a sound source area to a second area comprising positioning the acoustical insulation material of claim 1 between the sound source area and the second area.